

Three new *Agaristinae* species and the first record of *Argyrolepidia palaea* from Papua, Indonesia (Lepidoptera: Noctuidae, *Agaristinae*)

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Abstract: Two new species in the genus *Argyrolepidia* Hampson, 1901 and one in the genus *Immetalia* Jordan, 1896 are described from Indonesian New Guinea (Lepidoptera: Noctuidae, *Agaristinae*). *Argyrolepidia azurea* **spec. nov.** is compared with the similar *A. lunaris* Rothschild & Jordan, 1905. Furthermore a first record of *Argyrolepidia palaea* Rothschild & Jordan, 1905 is reported for Papua, Indonesia. The new species are depicted including the genitalia.

Rangkuman: Dua spesies baru di genus *Argyrolepidia* Hampson, 1901 dan satu di genus *Immetalia* Jordan, 1896 dipertelakan dari bagian barat New Guinea, Indonesia (Lepidoptera: Noctuidae, *Agaristinae*). *Argyrolepidia azurea* **spec. nov.** dibandingkan dengan *A. lunaris* Rothschild & Jordan, 1905, yang kelihatannya sama. Selanjutnya penangkapan pertama *Argyrolepidia palaea* Rothschild & Jordan, 1905 dilapor untuk Papua, Indonesia. Spesies-spesies baru serta genitalianya digambarkan.

Keywords: new species, *Agaristinae*, *Argyrolepidia*, *Immetalia*, New Guinea, Papua.

Introduction

In a recent expedition to a remote area in the Snow Mountains Henk van Mastrigt discovered a new agaristine moth. This was an opportunity to include two other new species in the same subfamily from a much older expedition made to the interior of New Guinea, the Third Archbold Expedition of 1938-1939, in this publication. The collected material from this expedition still generates new discoveries which emphasizes the importance of such expeditions. In another recent French expedition a rare record was made by Olivier Pequin of *Argyrolepidia palaea* Rothschild & Jordan, 1905, the first record from Papua and the fourth specimen known of this species.

The new species are *Argyrolepidia albiapex* **spec. nov.**, *A. azurea* **spec. nov.** and *Immetalia mokndoma* **spec. nov.** The species are described and depicted including the genitalia. *Argyrolepidia azurea* is compared with the similar *A. lunaris* Rothschild & Jordan, 1905.

Abbreviations

- Fwl. - Forewing length
KSP - Koleksi Suara Papua, (Collection of Papuan Insects), Jayapura, Papua, Indonesia
RMNH - Naturalis Biodiversity Center, Leiden, The Netherlands

Descriptions

Argyrolepidia albiapex spec. nov.

(Figs 1-2, 9)

Holotype: ♀, [Netherlands Indies], Moss Forest, 2600-2800 m, 31.x-5.xi.1938, Neth. Ind.-Amer. New Guinea Exped., leg. L.J. Toxopeus [RMNH].

Diagnosis:

A medium sized moth with a conspicuous white apex of the hindwings and a curved clear white discal stripe on the black forewings. On the forewing with iridescent blue scales along costa and in some spots.

Description:

Fwl. ♀ 17.6 mm. Head with black long hairs mixed with white hairs and scales around antennae and clypeus. Black labial palpal laterally with white band. Black antennae of female filiform, gradually thicker distally. Patagia and tegulae with long dark brown hairs mixed with some white. Black thorax centrally with a white patch. Dark brown legs with narrow white bands. Abdomen black with narrow white rings and a white anal tuft. Thorax and abdomen ventrally covered with grey-white hairy scales. Upperside forewing black with a copper shine and iridescent clear blue scales along the basal half of the subcostal vein and in a submedial spot in the cell which is only visible at a certain angle. The same iridescent scales form a subtoral spot at the dorsum and border the bright white narrow and angled short fascia at the end of the cell. Fringes black with only in the apex some white scaling. Underside of forewing brown with blue-white scales at wingbase and a broader "d" or "b" shaped white fascia which is broadly bordered with blue-white scales. The whole surface of the underside blue-purple iridescent which is stronger at the dorsum. Bright blue iridescent scales form a submedial patch in the cell and border the fascia at the innerside, which is only visible at a certain angle.

Upperside hindwings like forewing black with a copper shine. A bright white centre which reaches the dorsum and a distinct white apex with some pale blue scaling at the innerside. Fringes black. Underside like upperside but with extended blue-white scaling towards the base of the costa.

Male unknown.

Genitalia:

[prep. RV1349] Ostium wide and simpel. Antrum not sclerotized and running directly in a short ductus bursae. Ductus seminalis originating in the upper part of the cervix bursae which is only indicated by widening of the ductus. Bursae copulatrix in holotype damaged by mould but still recognizable, long and narrow and without any sclerotization, no signum present.

Distribution:

The only known female specimen was found during the Archbold Expedition in 1938 West of the Baliem Valley in Moss Forest (Mosboschkamp) at 2600-2800 meter, 138°43'E - 4°00'S according to Toxopeus (1940).

Etymology:

The species is named after its conspicuous white apex on the hindwing which is rather unusual in Agaristinae.

***Argyrolepidia azurea* spec. nov.**

(Figs 3-4, 10-11)

Holotype: ♂, [Netherlands Indies] Rattan Camp, 1200 m, 4.iii.1939, Neth.Ind.-Amer. New Guinea Exped., leg. L.J. Toxopeus [RMNH].

Diagnosis:

Similar to *Argyrolepidia lunaris* Rothschild & Jordan, 1905 (fig. 5) but that species lacks the submedial squarish spot in the forewing cell and the strong azure blue iridescence on the hindwing of *azurea*.

Description:

Fwl. 19.2 mm. Head grey-brown with some white on frons and clypeus. Labial palpa brown with yellow base, at underside with white scaling and distally with some pale blue scales.

Antennae filiform, black with a longitudinal row of white scales. Head ventrally white with yellow towards thorax. Patagia grey-brown, scarcely mixed with pale blue scales, at rim with head more bluish scales. Tegulae and thorax unfortunately worn with loss of scales but most likely with grey-brown scaling mixed with some white scales. Ventrally thorax with long yellow hairy scales. Legs grey-brown with narrow white bands. Abdomen grey-brown with dorsally scarcely banded with some bluish scales, ventrally more distinctly banded with white and towards thorax totally white. Anal tuft with yellow and black.

Forewing dark brown with a copper shine. Between subcostal vein and costa grey-brown. A white squarish submedial spot in the cell and a narrow irregular fascia

obliquely running from subcostal vein to CuA2. An incomplete irregular subbasal line of blue iridescent scales and the same scales scarcely along costa. Fringes black but with white scales in the apex. Underside of forewing like upperside but with more extended white in fascia and submedial spot. Base of forewing bluish-white, at costa more intensely blue, also at the fascia and submedial spot.

Hindwing at upperside black with a copper shine, at certain angle with azure blue iridescence, at dorsum and at the border of the oval shaped white centre with metallic clear blue scales, at the dorsum also with some greenish iridescence. Cubital veins cross the white centre with black and blue. Fringes of hindwing black but with white scales below the apex. Underside of hindwing like upperside but with more extended white and clear blue scales at base and dorsum.

Female unknown.

Genitalia:

[prep. RV1350] Uncus robust and hook-shaped. Tegumen with peniculus with wide brush of long hairs. Juxta small and compiled of two connected lateral parts. Base of valva at connection with juxta indented. Valva long and slender with a straight costa of cucullus. Process of sacculus reaching to mid-length of valva, apex of this process curved as a hook. Aedeagus slender and slightly sinuous with trunk-shaped vesica without any cornutum.

Compared with the male genitalia of *Argyrolepidia lunaris* (figs 13-14) the following differences can be found: Uncus in *lunaris* much more slender and shorter. Peniculus with narrow brush of long hairs, thinner than in *azurea*. Juxta similar as in *azurea*, slightly larger. Valva long and slender with curved costa of cucullus. Process of sacculus longer and straighter, reaching two-third of valva length, apex less hook-shaped. Aedeagus in example of *lunaris* unfortunately damaged by *Dermestis* larvae but still the stronger sinuous shape and longer size is visible, the vesica has been eaten.

Distribution:

The only known male specimen was found during the Archbold Expedition in 1939 in the northern Jayawijaya Mountains in Rattan Camp (Tusschenkamp) at 1200 meter, 139°09' E - 3°30' S according to Toxopeus (1940).

Etymology:

The species is named after the azure blue iridescence on the hindwing.

***Argyrolepidia palaea* Rothschild & Jordan, 1905**

(Figs 6-7)

Olivier Pequin collected an interesting species of *Argyrolepidia* during his visit to Papua in 2009. Which I presumed to be a new species turned out to be a rare

species which was until now only found in Owgarra, former British New Guinea (now Papua New Guinea) (Rothschild & Jordan, 1905). Martin Honey, collection manager at the Natural History Museum in London, was so kind to compare digital photographs with the collection and found out it was *Argyrolepidia palaea* Rothschild & Jordan, 1905.

It is the first record of this species in the Indonesian part of New Guinea. It was found on 17th August 2009 in Pass Valley, Jayawijaya Mountains at 2100 meters near river Abak.

There is no other agaristine species which can be confused with this one, it is very characteristic with its conspicuous metallic clear blue hindwing centre.

Immetalia mokndoma spec. nov.

(Figs 8-9, 15-16)

Holotype: ♂, [Indonesia], Prov. Papua, Kab. Puncak Jaya, Mokndoma, 2180 m, S 3°38.690' - E 137°46.500', 15-23.I.2013, leg. Family Wild & HvM [KSP].

Diagnosis:

An intensely black species with bright white patches and a metallic blue iridescence on the hindwing. Both forewing and hindwing are rounded. The species somewhat resembles *Immetalia cyanea* Rothschild, 1896 from Biak and Supiori Island but that species is without white pattern and the wingshape is different.

Description:

Fwl. 23.6 mm. Head with upright black hairy scales, labial palpa and filiform antennae black. Patagia orange-yellow, tegulae and thorax dorsally black, ventrally thorax with orange-yellow hairy scales. Legs black. Abdomen dorsally metallic steel blue, ventrally black with some steel blue iridescence and with an orange-yellow anal tuft.

Forewing upperside deep sooty black with a narrow bright white curved subbasal costal stripe and straight submarginal costal stripe. The forewing scarcely sprinkled with blue metallic scales. Underside like upperside but with slightly blue iridescence and white stripes somewhat broader.

Hindwing upperside black with strong steel blue iridescence. An oval shaped bright white central patch and a smaller squarish subbasal spot. Underside like upperside but with the subbasal spot more rounded.

Female unknown.

Genitalia:

Uncus club-shaped with broad base. Tegumen with strong rim, vinculum wide with irregular sclerotized edge and strong but undep saccus. Juxta shield-shaped,

upper part stronger sclerotized, lower part in the middle indented. Valva long and narrow, simpel constructed without any process. Sacculus with folded rim, distally continued in an oblique fold to the middle of the valva. Aedeagus long, tube narrower than base and coecum. Vesica with a basal lobe and distal lobe. Basal lobe ventrally partly sclerotized, dorsally scobinated with fine chitine drops. Distal lobe with dorsal fields of very fine and more coarse scobination of chitine drops, distally with a field of small conical cornuti.

Distribution:

So far only the male holotype is known. It is found in the Snow Mountains near Puncak Jaya, an area that was only explored earlier by the historic Wollaston Expedition (1912-1913).

Etymology:

The name of the species is derived from the small village Mokndoma where this moth was collected for the first time.

Acknowledgements

Kees van den Berg (RMNH) I am grateful for his help with the digital photographs of the genitalia. I want to thank Henk van Mastrigt and Mike Wild with his family for the opportunity to describe the new species from Mokndoma. I thank Martin Honey, collection manager of the Lepidoptera in the Natural History Museum in London, for checking and confirming some identifications of presumed new and already described species, including *Argyrolepidia palaea*, and finally but not least I want to thank Olivier Pequin (Paris) for his contribution with the last mentioned specimen.

Literature

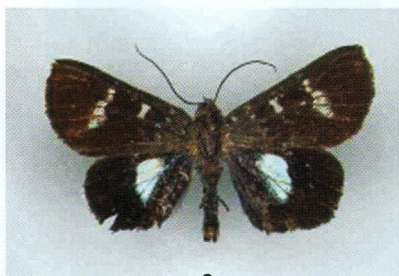
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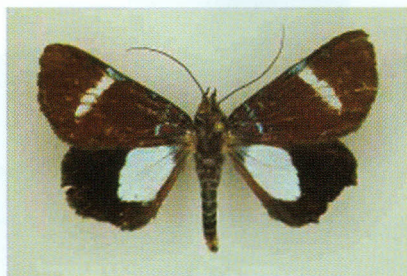
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Figs 1-2. *Argyrolepidia albiapex* **spec. nov.** ♀, Moss Forest, Archbold exp. 1938 [RMNH]: 1. upperside, 2. underside.

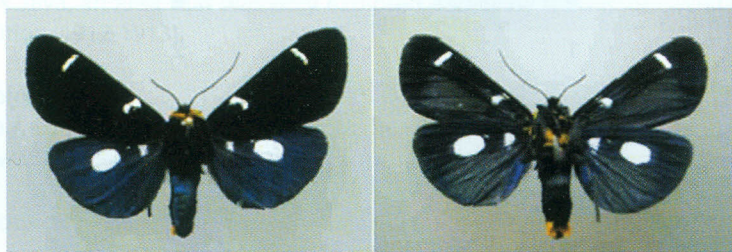
Figs 3-4. *Argyrolepidia azurea* **spec. nov.** ♂, Rattan Camp, Archbold exp. 1939 [RMNH]: 3. upperside, 4. underside.

Fig. 5. *Argyrolepidia lunaris* Rothschild & Jordan, 1905 ♂, Timeepa, Irian Jaya [ZMAN].



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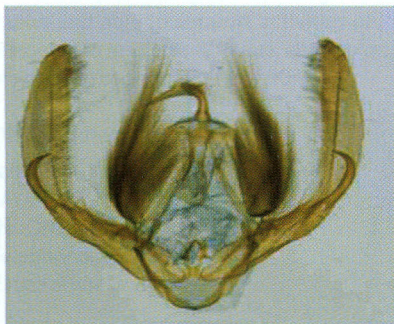


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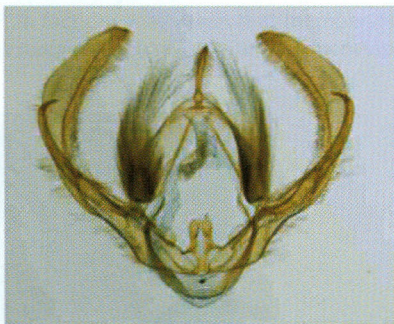
Figs 6-7. *Argyrolepidia palaea* Rothschild & Jordan, 1905 ♂, Pass Valley, Papua [coll. Olivier Pequin]: 6. upperside, 7. underside.

Figs 8-9. *Immetalia mokndoma* **spec. nov.** ♂, Mokndoma, Central Mountains, Papua [KSP]: 8. upperside, 9. underside.

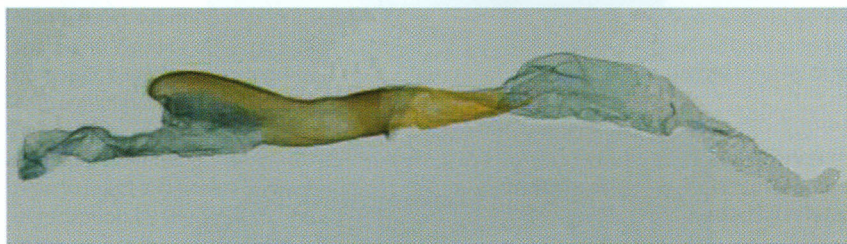
Fig. 10. ♀ genitalia *Argyrolepidia albiapex* **spec. nov.** [prep. RV1349].



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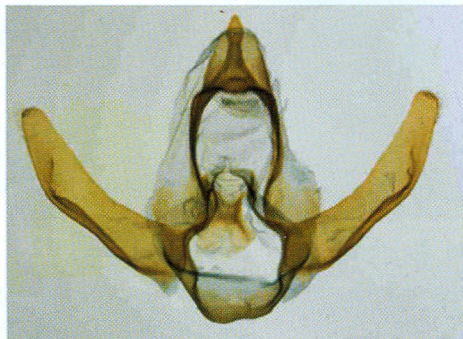
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Figs 11-12. ♂ genitalia *Argyrolepidia azurea* **spec. nov.** [prep. RV1350]:

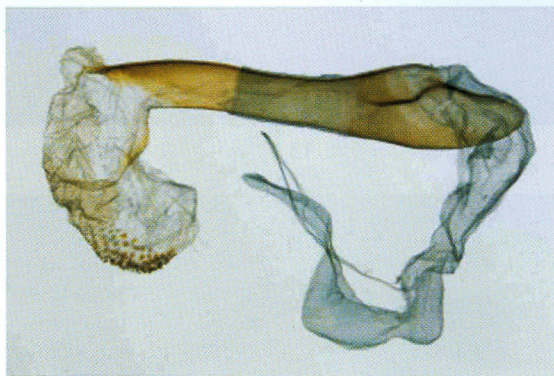
11. habitus, 12. aedeagus.

Figs 13-14. ♂ genitalia *Argyrolepidia lunaris* Rothschild & Jordan, 1905 [prep. RV1351]:

13. habitus, 14. aedeagus.



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Figs. 15-16. ♂ genitalia *Immetalia mokndoma* **spec. nov.** [prep. KSP65892]:
15. habitus, 16. aedeagus.